

## CLAIMS

1. A method for dynamic recompilation of source instructions for execution by a target processor, comprising the steps of:

5        interpreting the source instructions by considering intent and purpose of the source instructions; and  
            translating interpreted source instructions to a set of equivalent operation code for the target processor.

10      2. A method as in claim 1 wherein the interpreting step determines what the source instructions is trying to accomplish and the optimum way of doing it at the target processor, in an “interpolative” and context sensitive fashion.

15      3. A method as in claim 2 wherein the translating step optimizes the equivalent operation code by processing the source instructions in blocks of varying sizes, thereby considering the instructions that come before and after a current instruction to determine the most efficient approach out of several available approaches for encoding the equivalent operation code for the target processor to perform equivalent tasks specified by the source instructions.

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4. A dynamic compiler for dynamic recompilation of source instructions for execution by a target processor, comprising:

(1) a decoding stage for decoding the source instructions and parameters and creating an instruction stream that is optimized based on the source instructions and parameters;

(2) an optimization stage for optimizing flow of information and related operation code based on characteristics of the target processor; and

5       (3) an encoding stage for encoding instructions specifically for the target processor to achieve the intended results, including further optimizing the operation code for the target processor.